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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Anindya Roy

Roy-1

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EXAMINER

LOO, JUVENA W

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/762,022	Applicant(s) ROY, ANINDYA	
	Examiner Juvena W. Loo	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Objections

1. Claims 6, 15, and 16 are objected to because of the following informalities: In particular, claims 6, 15, and 16 are objected to because of the word "the" in "selecting one of the M alternative paths to reroute the traffic between the source node and the destination node the if the M alternative paths exist". Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 4 - 5, 13, and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Hu et al. (US 2003/0016808 A1).

Hu et al. discloses a method to dynamic adaptation to congestion in a connection-oriented network comprising the following features:

Regarding claim 1, *a method for performing congestion control in a connection-oriented packet-switching network* (Hu: see Figures 3, 4, 5, and 6), *the method comprising:*

receiving notification of traffic congestion in a first path connecting a source node and a destination node (Hu: see "When the path...mis-behaved connection" in page 3, section 0029);

ascertaining whether an alternative path exists with better throughput for routing traffic than the first path (Hu: see "The policy database...out of congestion" in page 3, section 0032); *and*

selecting the alternative path to route traffic between the source node and the destination node, if the alternative paths exist (Hu: see "The adaptation method...before cold rerouting" in page 2, section 0022).

Regarding claim 4, wherein the traffic congestion is experienced at one or more nodes forming a portion of the first path connecting the source node and the destination node (Hu: see "Although the make-before-break...of the path" in page 4, section 0033).

Regarding claim 5, wherein ascertaining whether the alternative path exists with better throughput for routing traffic than the first path, comprises determining whether an alternative path exists with an available cell rate that is greater than a available cell rate for the first path, the available cell rate for the first path measured when the traffic congestion in the first path is eliminated through cell rate control (Hu: see "The policy database...out of congestion" in page 3, section 0032).

Regarding claim 13, *one or more computer-readable media having stored thereon computer executable instructions that, when executed by one or more processors, causes a computer to:*

receive notification of traffic congestion in a first path connecting a source node and a destination node in a connection-oriented packet-switching network (Hu: see “When the path...mis-behaved connection” in page 3, section 0029);

ascertain whether an alternative path exists with better throughput for routing traffic than the first path (Hu: see “The policy database...out of congestion” in page 3, section 0032); and

select the alternative path to route traffic, if the alternative paths exists (Hu: see “The adaptation method...before cold rerouting” in page 2, section 0022).

Regarding claim 14, *wherein the computer is a switch* (Hu: see “when the male-before-break...of the path” in page 4, section 0033).

4. Claims 6, and 15 – 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Roy (US 6,636,487 B1).

Roy discloses a method and apparatus for providing multimedia conferencing services over an ATM network with an unspecified bit rate quality of service class comprising the following features:

Regarding claim 6, *a method for performing congestion control in a node in a connection-oriented packet-switching network* (Roy: see Figure 4), *the method comprising:*

receiving notification of traffic congestion at a node located in a first path connecting a source node and a destination node (Roy: see "The controller 201...by the controller 201" in column 8, line 66 through column 9, line 3), *wherein the first path is a non-real time connection with a Minimum Cell Rate (MCR) of R_{ACR} and a Peak Cell Rate (PCR) of R_{PCR}* (Roy: see "If a user...data as desired" in column 4, lines 10 – 54 and "When an user...user devices 106 and 112" in column 8, lines 19 – 42);

ascertaining whether M alternative paths exist with available resources able to satisfy the R_{ACR} for transferring traffic between the source node and the destination node, wherein M is equal to or greater than 1 (Roy: see Figure 4, 406, 407, and 408);
and

selecting one of the M alternative paths to reroute the traffic between the source node and the destination node the if the M alternative paths exist (Roy: see Figure 4, 408 and 409).

Regarding claim 15, *one or more computer-readable media having stored thereon computer executable instructions that, when executed by one or more processors (Roy: see "As shown in...the like" in column 12, line 65 through column 13, line 6), causes a computer to:*

receive notification of traffic congestion at a node located in a first path connecting a source node and a destination node (Roy: see "The controller 201...by the controller 201" in column 8, line 66 through column 9, line 3), wherein the first path is a non-real time connection with a Minimum Cell Rate (R_{MCR}) and Peak Cell Rate (PCR) of R_{PCR} (Roy: see "If a user...data as desired" in column 4, lines 10 – 54 and "When an user...user devices 106 and 112" in column 8, lines 19 – 42);

ascertain whether M alternative paths exist with available resources able to satisfy the R_{PCR} for transferring traffic between the source node and the destination node, wherein M is equal to or greater than 1 (Roy: see Figure 4, 406, 407, and 408);
and

select one of the M alternative paths to reroute the traffic between the source node and the destination node the if the M alternative paths exist (Roy: see Figure 4, 408 and 409).

Regarding claim 16, *a method for performing congestion control in a node in a connection-oriented packet-switching network (Roy: see Figure 4), the method comprising:*

receiving notification of traffic congestion at a node located in a first path connecting a source node and a destination node (Roy: see "The controller 201...by the controller 201" in column 8, line 66 through column 9, line 3), wherein the first path is a non-real time connection with a Minimum Cell Rate (R_{MCR}) and Peak Cell Rate (PCR) of R_{PCR} (Roy: see "If a user...data as desired" in column 4, lines 10 – 54 and "When an user...user devices 106 and 112" in column 8, lines 19 – 42);

ascertaining whether M alternative paths exist with available resources able to satisfy the R_{ACR} for transferring traffic between the source node and the destination node, wherein M is equal to or greater than 1 (Roy: see Figure 4, 406, 407, and 408);

selecting one of the M alternative paths to reroute the traffic between the source node and the destination node the if the M alternative paths exist (Roy: see Figure 4, 408 and 409);

ascertaining whether X alternative paths exist with available resources able to satisfy a reduced Available Cell Rate (ACR) of R'_{ACR} , if M alternative paths do not exist, wherein R'_{ACR} is less than the R_{ACR} , but is greater than a new ACR for the first path if rate control is instituted to eliminate the traffic congestion (Roy: see Figure 4, 404, 405, 406, 407, 408, 409, 410, 411, and 412; see also "The controller 201...bandwidth availability" in column 8, line 60 through column 10, line 40; see also "The controller 201...bandwidth availability" in column 8, line 60 through column 10, line 40 and "In step 403...the like" in column 12, lines 30 through column 12, line 56); and

selecting one of the X alternative paths to reroute the traffic between the source node and the destination node the if the X alternative paths exist (Roy: see Figure 4, 408 and 409).

Regarding claim 17, a system (Roy: see Figure 1), comprising:

means for receiving notification of traffic congestion at a node located in a first path connecting a source node and a destination node (Roy: see "The controller 201...by the controller 201" in column 8, line 66 through column 9, line 3), wherein the first path is a non-real time connection with a Minimum Cell Rate (R_{MCR}) and Peak Cell Rate (PCR) of R_{PCR} (Roy: see "If a user...data as desired" in column 4, lines 10 – 54 and "When an user...user devices 106 and 112" in column 8, lines 19 – 42);

means for ascertaining whether M alternative paths exist with available resources able to satisfy the R_{ACR} for transferring traffic between the source node and the destination node, wherein M is equal to or greater than 1 (Roy: see "If a user...data as desired" in column 4, lines 10 – 54 and "When an user...user devices 106 and 112" in column 8, lines 19 – 42); and

means for selecting one of the M alternative paths to reroute the traffic between the source node and the destination node the if the M alternative paths exist (Roy: see Figure 4, 408 and 409).

Regarding claim 18, further comprising

means for ascertaining whether X alternative paths exist with available resources able to satisfy a reduced Available Cell Rate (ACR) of R_{ACR} , if M alternative paths do not exist, wherein R_{ACR} is less than the R_{ACR} , but is greater than a new ACR for the first path if rate control is instituted to eliminate the traffic congestion (Roy: see Figure 4, 404, 405, 406, 407, 408, 409, 410, 411, and 412; see also "The controller 201...bandwidth availability" in column 8, line 60 through column 10, line 40 and "In step 403...the like" in column 12, lines 30 through column 12, line 56); and

means for selecting one of the X alternative paths to reroute the traffic between the source node and the destination node the if the X alternative paths exist (Roy: see Figure 4, 408 and 409).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hu et al. (US 2003/0016808 A1) in view of Abe et al. (6,108,304).

Hu discloses the claimed limitations in paragraph 3 above. Hu does not disclose the following features: regarding claim 2, *wherein the first path is a non-real time virtual circuit connection between the source node and the destination node*; regarding claim 3,

wherein the alternative path is a non-real time virtual circuit connection between the source node and the destination node.

Abe discloses a network management and a packet switching equipment comprising the following features:

Regarding claim 2, *wherein the first path is a non-real time virtual circuit connection between the source node and the destination node* (Abe: see Figure 16, R2 and "When congestion...R6(subsystem)" in column 10, lines 36 – 38).

Regarding claim 3, *wherein the alternative path is a non-real time virtual circuit connection between the source node and the destination node* (Abe: see Figure 16, R6 and "When congestion...R6(subsystem)" in column 10, lines 36 – 38).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Hu by using the features, as taught by Abe et al., in order to eliminate the need to set up connections to reduce a delay and a delay variation (Abe: see "eliminate the need...reservation" in column 3, lines 9 – 12).

7. Claims 7 – 9, and 11 – 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roy (US 6,636,487 B1) in view of Rabie et al. (US 2005/0160171 A1):

Roy discloses the claimed limitations in paragraph 4 above. Roy does not disclose the following features: regarding claim 7, *wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting one of the M alternative paths which best satisfies the R_{ACR} in accordance with one or more rules, if there are more than one of the M alternative paths*; regarding claim 8, *wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting one of the M alternative paths with a maximum amount unreserved resources to satisfy the R_{ACR} , if there is more than one of the M alternative paths*; regarding claim 9, *wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting one of the M alternative paths with a least amount unreserved resources but enough unreserved resources to support the R_{ACR} , if there is more than one of the M alternative paths*; regarding claim 11, *wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting one of the M alternative paths that satisfies the R_{ACR} according to one or more custom criteria, if there is more than one of the M alternative paths*; regarding claim 12, *wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting one of the M alternative paths that satisfies the R_{ACR} according to one or more fuzzy rules, if there is more than one of the M alternative paths*.

Rabie discloses a method for bandwidth management in data communication system comprising the following features:

Regarding claim 7, *wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting one of the M alternative paths which best satisfies the R_{ACR} in accordance with one or more rules, if there are more than one of the M alternative paths* (Rabie: see “Steps in the selection...selection policy” in page 5, column 0060 and “According to the Best...is selected” in page 5, section 0064).

Regarding claim 8, *wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting one of the M alternative paths with a maximum amount unreserved resources to satisfy the R_{ACR} , if there is more than one of the M alternative paths* (Rabie: see “Steps in the selection...selection policy” in page 5, column 0060 and “According to the Maximum Unreserved...is selected” in page 5, section 0062).

Regarding claim 9, *wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting one of the M alternative paths with a least amount unreserved resources but enough unreserved resources to support the R_{ACR} , if there is more than one of the M alternative paths* (Rabie: see “Steps in the selection...selection policy” in page 5, column 0060 and “According to the Mixing Long...is selected” in page 6, section 0067).

Regarding claim 11, *wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting one of the M alternative paths that satisfies the R_{ACR} according to one or more custom criteria, if there is more than one of the M alternative*

paths (Rabie: see "Steps in the selection...selection policy" in page 5, column 0060 and "According to the Least Number...is selected" in page 6, section 0066).

Regarding claim 12, *wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting one of the M alternative paths that satisfies the R_{ACR} according to one or more fuzzy rules, if there is more than one of the M alternative paths* (Rabie: see "Steps in the selection...selection policy" in page 5, column 0060 and "According to the Median Unreserved...is selected" in page 6, section 0072).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Roy by using the features, as taught by Rabie et al., in order to obtain benefits of more than one admission policy (Rabie: see "multiple admission...policy" in page 7, section 0080).

8. Claims 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roy (US 6,636,487 B1) in view of Acharya et al. (US 2004/0228323 A1).

Roy discloses the claimed limitations in paragraph 4 above. Roy does not disclose the following feature: regarding claim 10, *wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting a first one of the M alternative paths found to satisfy the R_{ACR} , if there is more than one of the M alternative paths.*

Acharya et al. discloses a maximum-flow based route precomputation algorithm comprising the following feature:

Regarding claim 10, *wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting a first one of the M alternative paths found to satisfy the R_{ACR} , if there is more than one of the M alternative paths* (Acharya: see "route selection...traffic demand" in page 4, section 0046).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Roy by using the features, as taught by Acharya et al., in order to satisfy a particular traffic demand (Acharya: see "one of the k...demand" in page 4, section 0046).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juvena W. Loo whose telephone number is (571) 270-1974. The examiner can normally be reached on Monday - Friday: 7:30am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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KWANG BIN YAO
SUPERVISORY PATENT EXAMINER

Juvena W Loo
Examiner
Art Unit 2616

A handwritten signature in black ink, appearing to read 'Juvena W Loo', is positioned below the printed name and title of the examiner.